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### 1 [Prototyping a fault-tolerant multiprocessor SoC with run-time fault recovery](#)

Ads



Xinping Zhu, Wei Qin

July 2006 DAC '06: Proceedings of the 43rd annual conference on Design automation

Publisher: ACM

 Full text available: [pdf\(578.65 KB\)](#) [Additional Information: full citation, abstract, references, index terms](#)

Bibliometrics: Downloads (6 Weeks): 5, Downloads (12 Months): 95, Citation Count: 0

Modern integrated circuits (ICs) are becoming increasingly complex. The complexity makes it difficult to design, manufacture and integrate these high performance ICs. The advent of multiprocessor Systems-on-chips (SoCs) makes it even more challenging ...

**Keywords:** fault-tolerance, multiprocessor system, network-on-chip, retargetable simulation, run-time verification, system-on-chip

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### 2 [Integrating coordinated checkpointing and recovery mechanisms into DSM synchronization barriers](#)



Azzedine Boukerche, Alba Cristina Magalhaes Alves De Melo

February 2007 Journal of Experimental Algorithmics (JEA), Volume 11

Publisher: ACM

 Full text available: [pdf\(248.56 KB\)](#) [Additional Information: full citation, abstract, references, index terms](#)

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 132, Citation Count: 0

Distributed shared memory (DSM) creates an abstraction of a physical shared memory that parallel programmers can access. Most recent software DSM systems provide relaxed-memory models that guarantee consistency only at synchronization operations, such ...

**Keywords:** Distributed shared memory, barrier synchronization

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### 3 [Recovery guarantees for Internet applications](#)



Roger Barga, David Lomet, German Shegalov, Gerhard Weikum

August 2004 ACM Transactions on Internet Technology (TOIT), Volume 4 Issue 3

Publisher: ACM

 Full text available: [pdf\(987.52 KB\)](#) [Additional Information: full citation, abstract, references, cited by, index terms, review](#)

Bibliometrics: Downloads (6 Weeks): 23, Downloads (12 Months): 202, Citation Count: 3

Internet-based e-services require application developers to deal explicitly with failures of the underlying software components, for example web servers, servlets, browser sessions, and so forth. This complicates application programming, and may expose ...

Keywords: Exactly-once execution, application recovery, communication protocols, interaction contracts

#### 4 [Error-tolerant password recovery](#)



Niklas Frykholm, Ari Juels

November 2001 CCS '01: Proceedings of the 8th ACM conference on Computer and Communications Security

Publisher: ACM

Full text available: [pdf\(250.03 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 73, Citation Count: 4

Many encryption systems require the user to memorize high entropy passwords or passphrases and reproduce them exactly. This is often a difficult task. We propose a more fault-tolerant scheme, where a high entropy key (or password) is derived from a sequence ...

Keywords: Reed-Solomon codes, error-correcting codes, fault-tolerance, fuzzy commitment, password ensembles, password recovery

#### 5 [B-tree concurrency control and recovery in page-server database systems](#)



Ibrahim Jaluta, Seppo Sippu, Eljas Soisalon-Soininen

March 2006 ACM Transactions on Database Systems (TODS), Volume 31 Issue 1

Publisher: ACM

Full text available: [pdf\(401.86 KB\)](#) Additional Information: [full citation](#), [appendices and supplements](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 421, Citation Count: 0

We develop new algorithms for the management of transactions in a page-shipping client-server database system in which the physical database is organized as a sparse B-tree index. Our starvation-free fine-grained locking protocol combines adaptive callbacks ...

Keywords: ARIES, ARIES/CSA, B-tree, cache consistency, callback locking, client-server database system, data shipping, key-range locking, page server, partial rollback, physiological logging, sparse B-tree, structure modification

#### 6 [Recovery of mobile internet transactions: algorithm, implementation and analysis](#)



Shashi Anand B, Kriithi Ramamritham

June 2005 MobIDE '05: Proceedings of the 4th ACM international workshop on Data engineering for wireless and mobile access

Publisher: ACM

Full text available: [pdf\(191.75 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 107, Citation Count: 0

The increasing popularity of mobile devices and the support of web portals towards performing transactions from these mobile devices has enabled business on the move. However, internet access from mobile devices is expensive and is subject to high rate ...

Keywords: WAP, WAP internet transaction, internet transaction, mobile internet transaction, mobile transaction, recovery

7 [Cheap recovery: a key to self-managing state](#)



Andrew C. Huang, Armando Fox

February 2005 ACM Transactions on Storage (TOS). Volume 1 Issue 1

Publisher: ACM

Full text available: [pdf\(1.24 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 149, Citation Count: 0

Cluster hash tables (CHTs) are key components of many large-scale Internet services due to their highly-scalable performance and the prevalence of the type of data they store. Another advantage of CHTs is that they can be designed to be as self-managing ...

Keywords: Cluster hash table, manageability, quorum replication, storage systems design

8 [A new scheme on recovery from failure in NICE overlay protocol](#)



Abdolreza Abdolhosseini Moghadam, Saman Barghi, Hamid Reza Rabiee, Mohammad Ghanbari

May 2006 InfoScale '06: Proceedings of the 1st international conference on Scalable information systems

Publisher: ACM

Full text available: [pdf\(204.05 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 45, Citation Count: 0

Overlay networks have been an active area of research for the past few years. The control overhead and the recovery from failure are the two important issues in the topology aware embedded overlay networks. In this research, we have introduced an enhanced ...

9 [Fast and transparent recovery for continuous availability of cluster-based servers](#)



Rosalia Christodouloupoulou, Kaloian Manassiev, Angelos Bilas, Cristiana Amza

March 2006 PPoPP '06: Proceedings of the eleventh ACM SIGPLAN symposium on Principles and practice of parallel programming

Publisher: ACM

Full text available: [pdf\(111.02 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 21, Downloads (12 Months): 112, Citation Count: 0

Recently there has been renewed interest in building reliable servers that support continuous application operation. Besides maintaining system state consistent after a failure, one of the main challenges in achieving continuous operation is to provide ...

Keywords: availability, distributed shared memory, fast failure reconfiguration, fault tolerance, scalability

10 [Dispelling 10 common disaster recovery myths: Lessons learned from Hurricane](#)



Katrina and other disasters

Brett J. L. Landry, M. Scott Koger

December 2006 Journal on Educational Resources in Computing (JERIC). Volume 6 Issue 4

Publisher: ACM

Full text available:  pdf(136.68 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 84, Downloads (12 Months): 484, Citation Count: 0

Disasters happen all the time; yet despite this, many organizations are caught unprepared or make unrealistic assumptions. These factors create environments that will fail during a disaster. Most information technology (IT) curricula do not cover disaster ...

Keywords: Hardware failures, IT curricula, backups, business continuity, disaster recovery, network attacks, software failures, viruses, worms


#### 11 The collective memory of amnesic processes



Rachid Guerraoui, Ron R. Levy, Bastian Pochon, Jim Pugh

March 2008 ACM Transactions on Algorithms (TALG). Volume 4 Issue 1

Publisher: ACM

Full text available:  pdf(580.10 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 0, Citation Count: 0

This article considers the problem of robustly emulating a shared atomic memory over a distributed message-passing system where processes can fail by crashing and possibly recover. We revisit the notion of atomicity in the crash-recovery context and ...

Keywords: Atomic registers, crash recovery, log complexity, shared-memory emulation


#### 12 On handling component and transaction failures in multi agent systems



Pradeep Reddy Varakantham, Santosh Kumar Gangwani, Kamalakar Karlapalem

December 2001 ACM SIGecom Exchanges. Volume 3 Issue 1

Publisher: ACM

Full text available:  pdf(93.91 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 43, Citation Count: 1

Multi agent systems are being used for various practical applications like e-commerce, e-auctions and gathering information from the web. Thus there is a need for these systems to be robust. However, agents can fail due to component failures. The atomic ...

Keywords: agent, atomicity in agents, durability in agents, logging in agents, multi agent system, recovery in agents


#### 13 Recovering device drivers



Michael M. Swift, Muthukaruppan Annamalai, Brian N. Bershad, Henry M. Levy

November 2006 ACM Transactions on Computer Systems (TOCS). Volume 24 Issue 4

Publisher: ACM


Full text available:  pdf(365.93 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 26, Downloads (12 Months): 282, Citation Count: 0

This article presents a new mechanism that enables applications to run correctly when device drivers fail. Because device drivers are the principal failing component in most systems, reducing driver-induced failures greatly improves overall reliability. ...

Keywords: I/O, Recovery, device drivers

#### 14 [What can identity-based cryptography offer to web services?](#)

 Jason Crampton, Hoon Wei Lim, Kenneth G. Paterson  
November 2007 SWS '07: Proceedings of the 2007 ACM workshop on Secure web services  
Publisher: ACM

Full text available:  [pdf\(245.87 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


Bibliometrics: Downloads (6 Weeks): 27, Downloads (12 Months): 208, Citation Count: 0

Web services are seen as the enabler of service-oriented computing, a promising next generation distributed computing technology. Independently, identity-based cryptography is emerging as a serious contender to more conventional certificate-based public ...

Keywords: identity-based cryptography, message-level security, web services

#### 15 [The evolution of Coda](#)

 M. Satyanarayanan  
May 2002 ACM Transactions on Computer Systems (TOCS), Volume 20 Issue 2  
Publisher: ACM


Full text available:  [pdf\(441.35 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 21, Downloads (12 Months): 195, Citation Count: 13

Failure-resilient, scalable, and secure read-write access to shared information by mobile and static users over wireless and wired networks is a fundamental computing challenge. In this article, we describe how the Coda file system has evolved to meet ...

Keywords: Adaptation, Linux, UNIX, Windows, caching, conflict resolution, continuous data access, data staging, disaster recovery, disconnected operation, failure, high availability, hoarding, intermittent networks, isolation-only transactions, low-bandwidth networks, mobile computing, optimistic replica control, server replication, translucent cache management, weakly connected operation

#### 16 [Using model checking to find serious file system errors](#)

 Junfeng Yang, Paul Twohey, Dawson Engler, Madanlal Musuvathi  
November 2006 ACM Transactions on Computer Systems (TOCS), Volume 24 Issue 4  
Publisher: ACM


Full text available:  [pdf\(534.00 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


Bibliometrics: Downloads (6 Weeks): 13, Downloads (12 Months): 263, Citation Count: 0

This article shows how to use model checking to find serious errors in file systems. Model checking is a formal verification technique tuned for finding corner-case errors by comprehensively exploring the state spaces defined by a system. File systems ...

Keywords: Model checking, crash, file system, journaling, recovery

#### 17 [BASE: Using abstraction to improve fault tolerance](#)

 Miguel Castro, Rodrigo Rodrigues, Barbara Liskov  
August 2003 ACM Transactions on Computer Systems (TOCS), Volume 21 Issue 3  
Publisher: ACM

Full text available:  [pdf\(438.18 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index](#)

[terms](#)

Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 144, Citation Count: 4

Software errors are a major cause of outages and they are increasingly exploited in malicious attacks. Byzantine fault tolerance allows replicated systems to mask some software errors but it is expensive to deploy. This paper describes a replication ...

**Keywords:** Byzantine fault tolerance, N-version programming, asynchronous systems, proactive recovery, state machine replication

## 18 [Atomicity and isolation for transactional processes](#)



Heiko Schuldt, Gustavo Alonso, Catriel Beeri, Hans-Jörg Schek

March 2002 ACM Transactions on Database Systems (TODS), Volume 27 Issue 1

Publisher: ACM

Full text available: [pdf\(1.22 MB\)](#)

**Additional Information:** [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 141, Citation Count: 10

Processes are increasingly being used to make complex application logic explicit. Programming using processes has significant advantages but it poses a difficult problem from the system point of view in that the interactions between processes cannot ...

**Keywords:** Advanced transaction models, business process management, electronic commerce, execution guarantees, locking, processes, semantically rich transactions, transactional workflows, unified theory of concurrency control and recovery

## 19 [Improving the reliability of commodity operating systems](#)



Michael M. Swift, Brian N. Bershad, Henry M. Levy

February 2005 ACM Transactions on Computer Systems (TOCS), Volume 23 Issue 1

Publisher: ACM

Full text available: [pdf\(549.98 KB\)](#)

**Additional Information:** [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 27, Downloads (12 Months): 374, Citation Count: 8

Despite decades of research in extensible operating system technology, extensions such as device drivers remain a significant cause of system failures. In Windows XP, for example, drivers account for 85percent; of recently reported failures. This article ...

**Keywords:** I/O, Recovery, device drivers, protection, virtual memory

## 20 [Total order broadcast and multicast algorithms: Taxonomy and survey](#)



Xavier Défago, André Schiper, Péter Urbán

December 2004 ACM Computing Surveys (CSUR), Volume 36 Issue 4

Publisher: ACM

Full text available: [pdf\(544.45 KB\)](#)

**Additional Information:** [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 42, Downloads (12 Months): 500, Citation Count: 6

Total order broadcast and multicast (also called atomic broadcast/multicast) present an important problem in distributed systems, especially with respect to fault-tolerance. In short, the primitive ensures that messages sent to a set of processes are, ...

**Keywords:** Distributed systems, agreement problems, atomic broadcast, atomic


multicast, classification, distributed algorithms, fault-tolerance, global ordering, group communication, message passing, survey, taxonomy, total ordering

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